

# **VISIONIK<sup>R</sup>**

**A U T O P H O N I C S**

## **COMPETITION SUBWOOFER INSTRUCTION MANUAL**

**V1065S4 V1265S4 V1565S4**

**COMPETITION  
SUBWOOFER**

DEAR CUSTOMER,

Congratulations on your purchase of the world's finest brand of car audio amplifiers. At Visonik we are committed to producing musical reproduction at its best, and we are pleased you chose our product. Through years of critical testing procedures and hand craftsmanship, we have created a wide range of products that reproduce music with all the clarity and richness you deserve.

**For maximum performance we recommend you have your new Visonik product installed by an Authorized Visonik Dealer. Please read your warranty and retain your receipt and original carton for possible future use.**

To learn more about Visonik, current world records held by Visonik and other information, please visit us on the world wide web at:

**[WWW.VISONIKCARAUDIO.COM](http://WWW.VISONIKCARAUDIO.COM)**

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### **!! Attention !!**

Continuous, excessive exposure to sound pressure levels in excess of 85 dB can cause a loss in hearing. While Visonik sound systems are capable of producing sound pressure levels greater than 85dB, they are also designed for enjoyment at reasonable levels. Please observe all local sound ordinances while listening to your Visonik sound system

## FEATURES

- **Single 4 Ohm Impedance**
- **Non-Pressed Paper Cone**
- **Vented Magnet**
- **Single 2" Voice Coil**
- **Die Cast Aluminum Basket**
- **Rubber Sealant Gasket**
- **Chrome Post Terminals**

## SPECIFICATIONS

### DIE CAST BASKET

The S4 Series Woofers uses a die cast basket for better voice coil alignment. The basket is aluminum and non-magnetic for better efficiency. In Addition, the aluminum dissipates heat far better than steel which allows more power handling. The Q of the speaker will be much higher than with a stamped steel frame, thus giving a lower resonate frequency.

### NON-PRESSED PAPER CONE

The cone is a spruce pulp paper that has been treated with a water resistant Poly Vinyl Acetate (PVA) emulsion. This provides cone rigidity and lowers distortion. Additionally the combination of weight and strength allows for high output levels without cone break up.

### SINGLE 4 OHM ALUMINUM VOICE COIL

For High efficient thermal transfer the voice coil is constructed with a black voice coil formed from anodized aluminum. This makes the voice coil highly efficient in dissipating heat thus improving the power handing capability.

### DUAL LAMINATED DUPONT SPIDER

Provides strong suspension for the subwoofer, which results in higher excursion capabilities.

### HYPER-EXTENDED POLE PIECE

Better low frequency response is obtained by having a better linear magnetic field for the operation of the woofer.

### FOAM SURROUND

Double Treated Foam for the front suspension is proven to add mechanical strength and reliability.

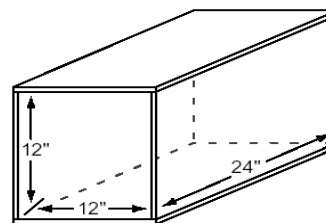
## CALCULATING ENCLOSURE VOLUME

Do you want to take up all the available space inside your Vehicle? Or are you looking for something that is compact enough to be removed easily when necessary? These are important questions you must answer before beginning your project.

First, measure out the area you're interested in placing the subwoofer enclosure. Use a good-quality measuring tape to determine the MAXIMUM height, width, and depth of your area. Height is the measurement up-and-down, width is the measurement from side-to-side, and depth is the measurement back-to-front.

It is extremely important to know the internal volume necessary for the Subwoofer you're using (also known as "box size"). Since not all subwoofers require the same amount of airspace, different lines of the same brand of woofer can have completely different enclosure size requirements. As general rule of thumb, making the enclosure too small will result in a lack of low-end bass response, and if it's too large, you won't have as much output as you could and the woofer's power handling will suffer.

Calculating the correct box size is easy if you just remember a few simple formulas and calculations. The key to calculating internal box dimensions is a basic understanding of volume: Cubic volume is derived by multiplying each of an object's dimensions (height, width, depth) by each other.



$$12 \times 12 \times 24 = 3456$$
$$3456 \div 1728 = 2.0$$

For example: If you measure the internal dimensions of a rectangular object (like a subwoofer box) and its internal height is 12", its width is 24", its depth is 12", and then multiply those dimensions together (12" X 24" X 12"), then you come up with a volume of 3,456 cubic inches. Divide this number by 1728 (1 cubic foot) and the total is the internal cubic volume of the box, which in this case is 2.0 cubic feet.

Enclosure volumes are never listed in cubic inches, so it is necessary to convert from cubic inches to cubic feet. (A cubic foot is no more than 12" X 12" X 12" or 1,728 cubic inches.) So, to convert from cubic inches to cubic feet, simply divide the volume in cubic inches by 1,728.

## SUBWOOFER PARAMETERS

The Following Parameters are for Optimal Subwoofer Performance.  
The Volume Parameters are calculated to include the displacement by the subwoofer Magnet and Basket.

PARAMETERS	V1065S4	V1265S4	V1565S4
Fo (Hz)	26.98	29.1	30.3
QMS	5.72	5.13	6.7
QES	0.39	0.38	0.69
QTS	0.36	0.35	0.63
VAS (Liters)	40.59	71.01	139.25
REVC (Ohms)	3.3	3.4	3.2
SPL @ 1 watt / 1 meter (dB)	84.9	88.4	89.31
X-max Linear peak-peak (mm)	24	24	24
LEVC at 1k Hz (mH)	3.53	4.11	3.52
ENCLOSURE VOLUME'S SEALED			
Minimum sealed (Cubic Feet)	0.5	0.85	1.75
Fill Required (%)	No	No	No
3dB down point (-3dB Hz)	54	57	43
Maximum sealed (Cubic Feet)	1.0	1.25	2.75
Fill Required (%)	No	No	No
3dB down point (-3dB Hz)	55	58	38
ENCLOSURE VOLUME'S PORTED			
Vented (Cubic Feet)	2.25	3.0	4.0
Vented to (Hz)	35	33	35
3dB down point (-3dB Hz)	29	27	33
Port Diameter (")	3	4	4
Port Length (")	12	19	20
Number of Ports	2	2	3

For more advanced competition information and enclosures,  
please visit the Visonik Technical Support page at:  
[www.VisonikCarAudio.com](http://www.VisonikCarAudio.com)

### Power Handling Capabilities

Model	V1065S4	V1265S4	V1565S4
<b>RMS Power</b>	<b>400W</b>	<b>450W</b>	<b>500W</b>
<b>MAX Power</b>	<b>800W</b>	<b>900W</b>	<b>1000W</b>

## ENCLOSURE CONSTRUCTION

Once the chosen the type of application for your subwoofer(s) and the dimensions of the box are calculated, the materials need to be selected. The following is a list of common enclosure construction materials:

**Particle Board:** Very inexpensive, however this board tends to come apart under the high stress of subwoofers, and is very susceptible to water damage! Not suitable for very large enclosures unless a great deal of internal bracing is added for extra rigidity.

**Medium Density Fiber Board (MDF):** The best overall material for speaker enclosures, fiberboard is extremely rigid, and will not come apart at even the highest pressure levels.

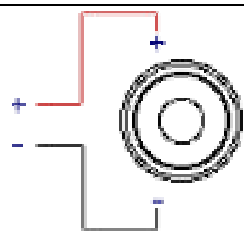
**Plywood (all types):** A poor choice for car stereo subwoofer enclosures, as plywood tends to de-laminate under heat and weather ranges found in cars. It can also buzz at low frequencies when played at high volume.

The thickness of material for the enclosure is governed by the overall size of the enclosure. The smallest of enclosures (1.0 cu ft or less) can use 5/8" or 1/2" material. Average size enclosures (1.0 cu ft to 4.0 cu ft) should use 3/4". Very large enclosures (over 4.0 cu ft) should use 1" material with braces to prevent enclosure flex.

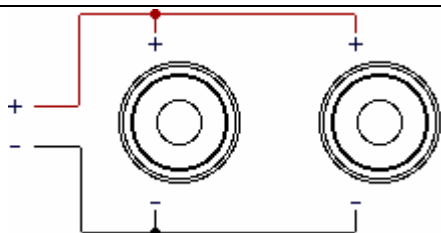
Adding damping material, such as fiberglass, or Dacron polyester (pillow stuffing like Poly-Fill) to your subwoofer enclosure helps cancel any standing waves or resonances that form in the enclosure because of its particular dimensions. We recommend adding stuffing only to sealed enclosures. It will not make up for a poorly-constructed enclosure or an enclosure that is built too small, but it can help make the enclosure play low frequencies with added emphasis. It is possible to make your speaker think that it is in a larger box than it actually is by adding extra damping material, up to 75% of the entire enclosure volume. The general rule here is to add 1 pound of fill material (R-19 fiberglass, Dacron, or lamb's wool) per cubic foot of enclosure volume.

Always follow the above general rule of thumb when selecting the amount of Fill. Fill should only be used for sealed enclosures only. This fill recommendation can be found on the Parameters and Specifications Page. Don't compress the material, just loosely add fill to the enclosure. This works because the fibers of the material cause the sound waves to bend around them, slowing the waves down and taking longer to reach the enclosure's sides. As much as a 15% change in box volume/response can be achieved by this method

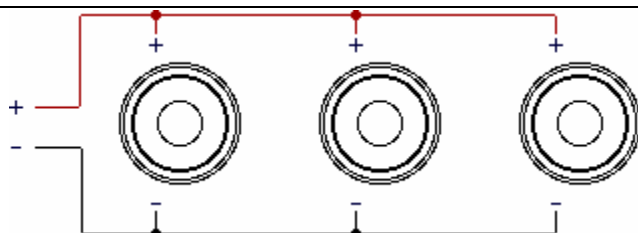
## WIRING SUBWOOFERS



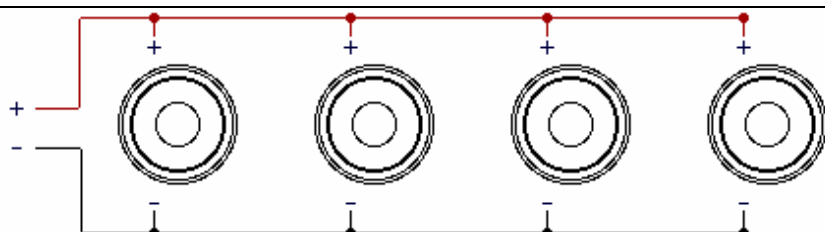
If using Single 2 ohm coils the total load would be **2.0 ohm**.  
 If using Single 4 ohm coils the total load would be **4.0 ohm**.  
 If using Single 6 ohm coils the total load would be **6.0 ohm**.



If using Single 2 ohm coils the total load would be **1.0 ohm**.  
 If using Single 4 ohm coils the total load would be **2.0 ohm**.  
 If using Single 6 ohm coils the total load would be **3.0 ohm**.



If using Single 2 ohm coils the total load would be **.75 ohm**.  
 If using Single 4 ohm coils the total load would be **1.5 ohm**.  
 If using Single 6 ohm coils the total load would be **2.25 ohm**.



If using Single 2 ohm coils the total load would be **.5 ohm**.  
 If using Single 4 ohm coils the total load would be **1.0 ohm**.  
 If using Single 6 ohm coils the total load would be **1.5 ohm**.

## TROUBLESHOOTING

### SYMPTOM

No Sound.

### CHECK POINT

Is the Amplifier power LED illuminated?

### CURE

1. Check fuses in amplifier.
2. Be sure Turn-on lead is connected.
3. Check signal leads.
4. Check gain control.
5. Check Tuner/Deck volume level.
6. Clean contacts on fuse holders.

### CHECK POINT

Is the Amplifier Overload LED illuminated?

### CURE

Check for speaker short or amplifier overheating.

### CHECK POINT

Check subwoofer impedances with Ohm-meter.

### CURE

If no reading, replace subwoofer.

### CHECK POINT

Check that subwoofer moves freely by pushing gently down on center.

### CURE

If subwoofer will not move, replace subwoofer.

### SYMPTOM

Subwoofer is making "Rattling" Noise.

### CHECK POINT

Check that Subwoofer is secured properly with screws.

### CURE

Tighten Mounting Screws.

### CHECK POINT

Check Speaker Box Construction.

### CURE

Check that enclosure is debris free.

### CHECK POINT

Check Speaker polarity.

### CURE

Correct Polarity.

## TROUBLE SHOOTING CONTINUED...

### SYMPTOM

On Dual Voice Coil Subwoofer, There Is No Sound in One Voice Coil

### CHECK POINT

Check Speaker Leads.

### CURE

Inspect for short circuit .  
Check for open Connection.

### CURE

Reverse Left and Right speaker leads to determine if it is occurring before the subwoofer.

### SYMPTOM

Speaker is Distorting at High Levels.

### CHECK POINT

Check Speaker load impedance capabilities for Amplifier.

### CURE

Inspect that speaker load impedance recommendations are followed. Check wiring configuration for speakers.(To Verify proper load impedance, use an OHM meter to measure the total load for each channel of the amplifier.

### CHECK POINT

Verify that Amplifier or Crossover settings are correct.

### CURE

Select Low Pass Amp/Crossover setting

## ??Need More Technical Support??

PLEASE VISIT

**WWW.VISONIKCARAUDIO.COM**

## LIMITED WARRANTY

### • LENGTH OF WARRANTY

1 year on Video Products  
2 years on Electronic Products  
2 years on Speakers and Subwoofers

### • WHAT IS COVERED

Warranty applies only to Visonik products sold to consumers by Authorized Visonik Dealers in the United States of America or its possessions. Products purchased by consumers from Authorized Visonik Dealer outside of the USA are covered only by that country's distributor.

### • WHO IS COVERED

This warranty covers only the **original purchaser** of Visonik product purchased from an Authorized Visonik Dealer in the United States. For a list of Authorized Internet Retail Stores go to <http://www.VisonikCarAudio.com>. In order to receive service, the purchaser must provide Visonik with a copy of the receipt stating the customer name, Visonik Authorized dealer name, product purchased and date of purchase. Products found to be defective during the warranty period will be repaired or replaced (with a product deemed to be equivalent) at Visonik's discretion.

### • WHAT IS NOT COVERED

1. Damage caused by accident, abuse, improper operations, water, or theft.
2. Any cost or expense related to the removal or reinstallation of product.
3. Repair Service performed by anyone other than Visonik's Repair Department.
4. Any product which has had the serial number defaced, altered, or removed.
5. Any product purchased outside the United States.
6. Any product not purchased from an Authorized Visonik Dealer.

### • LIMIT ON IMPLIED WARRANTIES

Any implied warranties including warranties of fitness for use and merchantability are limited in duration to the period of the express warranty set forth above. Some states do not allow limitations on the length of an implied warranty, so this limitation may not apply. No person is authorized to assume for Visonik any other liability in connection with the sale of the product.

### • HOW TO OBTAIN SERVICE

1. Please call (310) 223-0400 for Visonik Customer Service.  
Customer Service hours : Monday-Friday, 8am-5pm Pacific Standard Time.
2. Obtain a RA # (Return Authorization Number) from Customer Service.
3. Obtain a "Cashiers Check" or "Money Order" for \$9.00 per item for return postage.  
(No personal Checks will be accepted)
4. Once you receive your return authorization number from our Warranty Department, please print this number **LARGE** on the outside of the packaging.
5. No products will be accepted without a Return Authorization number.
6. Please include the following items with the returned product:
  - a. Copy of the Original Receipt of purchase (Required)
  - b. Cashiers Check or Money Order for \$9.00 per item
  - c. Return Address for shipment.
7. Ship to:

**Visonik  
Warranty Department  
3116 Via Mondo  
Rancho Dominguez, CA 90221  
RA#:** \_\_\_\_\_

## NOTES

Investigate the layout of your automobile thoroughly before drilling or cutting any holes. Use extreme care when you work near the gas tanks, gas or hydraulic lines, and electrical wiring. Always make sure the Subwoofer(s) is securely mounted. Mounting the subwoofer securely to the automobile will prevent damage to the car or injury to a person, particularly in the event of an accident.

Don't mount the system so that the wire connections are unprotected or are subject to pinching or damage from nearby objects.

Any +12 VDC power wire must be fused at the battery positive terminal connection. Before making or breaking power connections at the system power terminals, disconnect the + 12V wire at the battery. Confirm your head unit and/or other equipment is turned off while connecting the input RCA jacks and speaker terminals.

If you need to replace any fuses, replace it only with a fuse identical to that supplied with the system. Using a fuse of different type or rating may result in damage to this system which isn't covered by the warranty.

**WARNING**

VISONIK

RANCHO DOMINGUEZ CA 90221

TEL: 310.223.0400 FAX: 310.223.0412



Dear Customer,

Thank you for selecting Visonik for your high end mobile entertainment needs. Visonik has many years of experience in the design and manufacturing of mobile entertainment products.

Visonik has committed many years of research and development to bring you products that will perform for your musical enjoyment.

Additionally, we are confident that your choice of Visonik will bring you the satisfaction of great sounds so that when you think about purchasing more mobile entertainment products you will again select a Visonik product.

Please take a moment to complete the enclosed customer survey card, this will enable us to keep you advised on our latest advancements and provide us a better understanding of our customers. This information will also be used to develop new products to meet your needs.

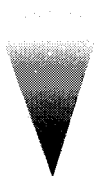
We appreciate the confidence demonstrated by your purchase of a Visonik product and we shall do all we can to uphold that confidence.

Sincerely,

Sameer Aboabdo

President  
Visonik Inc.

[www.visonikcaraudio.com](http://www.visonikcaraudio.com)



Model Purchased >

Date Purchased >>

Purchased From

Name >>

City >>

State >

Which of the following magazines do you read? Circle any.

Mobile Entertainment >> Auto Sound & Security > DUB Magazine > MAX Power

Car Stereo Review >> Car Audio & Elec. > Other Magazines >

Is this your first Visonik purchase? > Yes or No

If yes, which brands do you normally buy? >

What brands did you consider before purchasing Visonik? >

What factors influenced your purchase? Circle any.

Quality > Power Handling > Appearance > Reputation > Friend > Other >

Your Visonik equipment was installed by? > Yourself or Professional Installer

Was your Visonik purchase an upgrade for your existing car stereo? > Yes or No

Your Age >  Gender > M or F Favorite Music Type >

# LIMITED WARRANTY

www.visionikcaraudio.com

## What is Covered

Warranty applies only to Visionik products sold to consumers by authorized Visionik dealers in the United States of America or its possessions. Products purchased by consumers from authorized Visionik dealer outside of the USA are covered only by that country's distributor.

## What is Not Covered

- 1> Damage caused by accident, abuse, improper operations, water or theft.
- 2> Any cost or expense related to the removal or reinstallation of product.
- 3> Repair service performed by anyone other than Visionik's repair department.
- 4> Any product which has had the serial number defaced altered or removed.
- 5> Any product purchased outside the United States.
- 6> Any product not purchased from an authorized Visionik dealer.

## Who is Covered

This warranty covers only the original purchaser of Visionik product purchased from an authorized Visionik dealer in the United States. For a list of authorized Internet retail stores go to <http://www.visionikcaraudio.com>. In order to receive service, the purchaser must provide Visionik with a copy of the receipt stating the customer name, Visionik authorized dealer name, product purchased and date of purchase. Products found to be defective during the warranty period will be repaired or replaced (with a product deemed to be equivalent) at Visionik's discretion.

## Equivalent Limit on Implied Warranty

Any implied warranties including warranties of fitness for use and merchantability are limited in duration to the period of the express warranty set forth above. Some states do not allow limitations on the length of an implied warranty, so this limitation may not apply. No person is authorized to assume for Visionik any other liability in connection with the sale of the product.

## Length of Warranty

2 years on Electronic Products

2 years on Speakers and Subwoofers

### Your Records

Model Number > \_\_\_\_\_  
Date Purchased > \_\_\_\_\_  
Place of Purchase > \_\_\_\_\_

..... Fold and Tear Here .....

This registration must be filled out and mailed within 10 days of purchase to validate warranty.

Name > \_\_\_\_\_  
Street > \_\_\_\_\_  
City > \_\_\_\_\_ State > \_\_\_\_\_ Zip > \_\_\_\_\_  
Model Number > \_\_\_\_\_ Date Purchased > \_\_\_\_\_  
Place Purchased > \_\_\_\_\_

Purchased For > (Circle One) > Gift > Replacement Speakers > Competition Use > Personal Use

If replacement, what is the name and model number of the system replaced?

Name > \_\_\_\_\_  
Model Number > \_\_\_\_\_

Why did you purchase Visionik speakers? > (Circle One) > Sound > Price > Dealer Recommendation

> Other > \_\_\_\_\_

Additional Comments > \_\_\_\_\_

1st  
Class  
Postage



**VISONIK**  
AUTOPHONICS®

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Rancho Dominguez  
CA • 90221

